



COMPONENTS NEWS

CELL BREAK OUT

IBM has signed a deal with US-based Mercury Computer Systems to license the revolutionary Cell processor. This deal is the first that sells the new design outside the games market.

The Cell chip, developed jointly by IBM, Sony and Toshiba, combines nine processors on a single piece of silicon and could revolutionise graphics processing. The architecture consists of a single master core based on the PowerPC design and eight secondary processors. It has a peak performance of 200 gigaflops, according to IBM. The processor is expected to make its first appearance in the PlayStation 3, which is due to be launched next year.

The deal with Mercury Computer Systems will be playing to the Cell's strengths. Mercury said that it expects to incorporate the chip in "data-intensive applications". The company specialises in transforming large quantities of data from sensors and turning it into information that can be visualised and analysed. The company has particular strengths in the medical and military markets.

Mercury is a niche supplier of high-performance equipment, so IBM will not be expecting to ship enormous quantities. However, the resulting applications will undoubtedly provide some high-profile applications for the Cell that will show off the processor's capabilities and demonstrate to the industry at large that the Cell is capable of much more than generating photographic-quality monsters in real time.

REVIEW BAREBONES CASE

FOXCONN Tuckaway

RATING ★★★★★

PRICE £200 inc VAT

SUPPLIER sales.uk@foxconn.com

DETAILS www.foxconnchannel.com



If you want a tiny, basic PC, Foxconn's Tuckaway could be ideal. The chassis is so small there's not even room for a power supply inside; instead it has a neat notebook-style external unit.

One of the challenges with this kind of PC is building it. However, there's not that much that has to be done with the Tuckaway, as it comes with its memory card reader and notebook DVD/CD-RW combo drive installed.

This leaves you to install only the memory, processor and hard disk. While the Intel 915-based motherboard supports most LGA775 processors, the cooling system will handle only a 3.4GHz processor or below. However, we'd suggest that you fit no more than a 3GHz processor, as the computer gets quite hot otherwise. There are two DDR memory slots on the motherboard, so we'd advise budgeting for 512MB of memory.

You have to remove the top of the case using the thumb screws to install these components. It's only then that you realise how cramped the inside is. To get to the processor socket, you have to remove the cooling fans and their assembly. It's important to install the processor first, as the socket's lever can't be raised while memory is installed due to lack of space.

The heat sink then has to be screwed to the board before you can replace the cooling fans. It's a bit of a squeeze getting everything back in place and you'll need a bit of force; it feels as though the components don't quite fit properly. Finally, there's a single PCI slot for expansion. You

won't be able to upgrade the onboard Intel graphics, but you can, for example, install a TV card.

With the top of the case back on you can install the hard disk. This is done by turning the case over and removing the bottom panel, which gives access to the hard disk cage. Unfortunately, the cage isn't very big and we couldn't get a 250GB hard disk to fit inside it. A 160GB disk or below should be fine, as these tend to be thinner.

You'll also need a SATA hard disk, as this is the only connection provided, which could make this case a poor choice if you were hoping to salvage bits from an older computer. Again, it's a little difficult to reattach the bottom panel and it required some gentle persuasion to make it sit flush.

The Tuckaway was a lot quieter than we were expecting. The scores of 122 in our *Shopper* tests and 4,328 in PCMark04 were respectable for a PC using a 3.4GHz processor, although the poor onboard graphics mean you can't play games.

As a simple desktop PC built for office applications, the Tuckaway is an attractive choice.

David Ludlow

✓ Small; quiet; includes DVD drive

✗ Hard to assemble; won't take all hard disks

SPECIFICATIONS Intel 915 chipset, takes LGA775 processors (max 3.4GHz), DVD/CD-RW combo drive, 7-in-1 memory card reader, six USB2.0 ports, two FireWire ports, one PCI slot

HOTLIST GRAPHICS CARD

GEcube X800 XL

RATING ★★★★★

PRICE £205 inc VAT

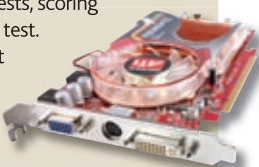
SUPPLIER www.sphinxcomputers.com

DETAILS www.gecube.com



Based on ATI's Radeon X800 XL chip, GeCube's graphics card perfectly balances price against performance. With 16 pixel pipelines, a 500MHz core speed and 1GHz of GDDR3 memory, it has fantastic specifications. These shone through in our tests, scoring 61.4fps in our Doom 3 test.

This is an excellent card for those that want high-end performance without the huge cost.



SPECIFICATIONS ATI Radeon X800 XL, 256MB GDDR3 memory, PCI-E x16 interface, TV out (composite, component and S-video). Part code VC26057

HOTLIST PROCESSOR

INTEL Pentium 4 550

RATING ★★★★★

PRICE £181 inc VAT

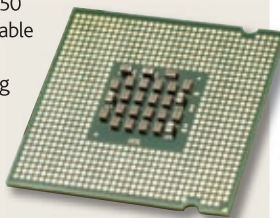
SUPPLIER www.pcnextday.co.uk

DETAILS www.savastore.com



The Pentium 4 550 runs at a respectable clock speed of 3.4GHz, providing ample raw power, and is particularly strong at video

compression. The processor will work with any LGA775 motherboard, which also means you can use the latest DDR2 memory and PCI-E graphics cards.



SPECIFICATIONS 3.4GHz clock speed, LGA775 connector, 800MHz front side bus. Part code BX8-547PG3400E

HOTLIST BAREBONES CASE

BIostar iDEQ 330P

RATING ★★★★★

PRICE £215 inc VAT

SUPPLIER www.microdirect.co.uk

DETAILS www.biostar.com.tw

Biostar's iDEQ 330P uses the same principles as Intel's BTX design, but applies it to Socket 939 AMD processors. A redesigned motherboard means that a single fan is all that's needed to cool the processor and motherboard.

The case is very well designed and opens like a car bonnet. It achieved good scores in our performance tests.



SPECIFICATIONS nVidia nForce 4 chipset, supports AMD Socket 939 processors, two DIMM slots, one PCI, one PCI-E x16, one PCI-E x1 slot, one 5 1/4" drive bay, two 3 1/2" drive bays, 7-in-1 memory card reader, three USB2.0, one Gigabit Ethernet, two FireWire ports, eight-channel audio. Part code BARB101DQ330P



REVIEW GRAPHICS CARD

GE CUBE X800 XL AGP

RATING ★★★★★

PRICE £224 inc VAT

SUPPLIER www.lowestonweb.comDETAILS www.gecube.com.tw

If you have an AGP motherboard – and many of us still do – then you may start to feel as though all the latest graphics cards have passed you by. Fear not, though: GeCube has released an AGP version of its Radeon X800 XL graphics card.

The chip is essentially a slightly cut-down version of the X800 XT, but it's significantly cheaper and still has great performance. With 16 pixel pipelines, a 500MHz core speed and 256MB of



GDDR3 memory running at 500MHz (1GHz effective), it isn't far behind the X800 XT.

Putting it through its paces in an Athlon 3500+ test bed returned scores of 10,129 in 3DMark03 and 62.1fps in Doom 3 running at 1,024x768. This

is slightly behind the results we got from the PCI-E version of the card, however.

It has DVI, analogue and TV outputs, so you can connect it to any monitor or TV. GeCube supplies the card with Counter Strike: Condition Zero, PowerDVD 5 and PowerDirector 2.5. It's not the most exciting bundle; you'll want a new game to show off the card's power.

It's good value, giving high-end performance without the high-end price. For AGP motherboard owners it's a great opportunity to squeeze the last bit of performance out of their PCs.

David Ludlow



Quick; good upgrade option for AGP users



Lags slightly behind the PCI-E version

SPECIFICATIONS ATI Radeon X800 XL, 256MB GDDR3 RAM (1GHz), AGP 8x interface

REVIEW GRAPHICS CARD

SAPPHIRE Radeon X550

RATING ★★★★★

PRICE £50 inc VAT

DETAILS www.sapphiretech.com

Just in case you thought there weren't enough graphics cards on the market, Sapphire has launched its new budget PCI-E card. Based on ATI's new Radeon X550 chip, it has a 400MHz core speed and 256MB of DDR memory running at 500MHz.

It draws all its power through the PCI-E slot and has a single quiet fan to cool it. However, a passively cooled version of the card is available as well, which is ideal for media centre PCs that will sit in the lounge and need to be as quiet as possible.



As this is a budget card, you can't expect too much performance from it, as its scores of 3,406 in 3DMark03 and 11.6fps in Doom 3 show. However, it runs much better at lower resolutions with lower detail settings. At 800x600 with full-scene anti-aliasing (FSAA) turned off, we achieved a playable frame rate of 33.9fps. For the occasional first-

person shooter it will be fine, but the X550 is better suited to less demanding pursuits, such as real-time strategy games.

Sapphire is also marketing the card as ideal for media centre PCs. Its low price and good range of outputs (DVI, analogue and TV) certainly cover all the bases, while its quiet operation is a boon.

For the money, it's a very good choice if you want to upgrade from basic onboard graphics for a wider selection of outputs, provided you don't play many games.

David Ludlow



Cheap; capable of low-resolution gaming



Basic software bundle

SPECIFICATIONS ATI Radeon X550, 256MB DDR RAM, PCI-E x16 interface. **Part code** X550

HOTLIST SOCKET 939 MOTHERBOARD

ECS KN1 Extreme

RATING ★★★★★

PRICE £84 inc VAT

SUPPLIER www.wirral_it.co.ukDETAILS www.ecs.com.tw

Based on nVidia's nForce 4 Ultra chipset, ECS's KN1 Extreme is a high-performance motherboard. Its score of 117 in *Shopper's* application benchmarks and 4,581 in PCMark04 showed this to be the case.

It has loads of features onboard thanks to nVidia's chipset and costs well under £100, making it the perfect foundation for a high-performance AMD-based computer.



SPECIFICATIONS nVidia nForce 4 chipset, supports AMD Socket 939 processor, four DDR memory slots, two LAN ports, 1 PCI-E x16, 2 PCI-E x1, 3 PCI, 6 SATA, 2 IDE. **Part code** KN1Extreme



HOTLIST PROCESSOR

AMD Athlon 64 3400+

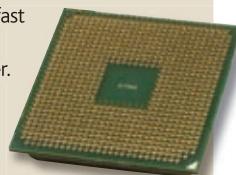
RATING ★★★★★

PRICE £118 inc VAT

SUPPLIER www.dabs.com

AMD's Athlon 64 3400+ on Socket 754 is nearly as fast as a Socket 939 Athlon, and significantly cheaper. Combine it with one of the many cheap Socket 754 motherboards and you can build a powerful computer on a tight budget.

With the release of a 64-bit version of Windows just around the corner, this processor's performance is just going to get better and better.



SPECIFICATIONS 2.4GHz clock speed, Socket 754, 2x 800MHz HyperTransport bus. **Part code** ADA3400AXB0X

HOTLIST LGA775 MOTHERBOARD

ECS PF21 Extreme

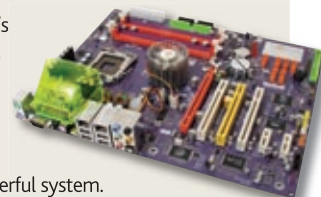
RATING ★★★★★

PRICE £100 inc VAT

DETAILS www.wirral-it.co.uk

Featuring Intel's 925XE chipset, ECS's PF21 Extreme motherboard provides the base for a powerful system. It supports 1,066MHz frontside bus (FSB) processors and DDR2 RAM, includes a 54g wireless adaptor and has six SATA ports.

For future upgrade potential you can't go wrong with this board, and it's very good value, too.



SPECIFICATIONS Intel 925XE PCI Express chipset, four DDR2 slots, three PCI slots, two IDE ports, six SATA ports, two PCI-E x1 slots, one PCI-E x16 slot





REVIEW MOTHERBOARD

ASUS
P5LD2 Deluxe

RATING ★★★★★

PRICE £125 inc VAT

SUPPLIER www.europc.co.ukDETAILS www.asus.com.tw

Asus's P5LD2 Deluxe uses Intel's 945P chipset, so it has support for all LGA775 processors, including dual-core and those with a 1,066MHz front-side bus. What makes this board stand out, though, is its two PCI-E x16 slots for using two nVidia graphics cards together in SLI mode. Previously we've only seen this configuration on nForce 4-based boards, and this is the first time the technology has appeared on an Intel chipset-based board. It's not officially ratified, though, so there's no guarantee that it will work with all cards.

The PCI-E x16 slots are spaced further apart than on nForce-based boards, leaving more room for airflow. This does mean, though, that you can't use a standard SLI connector, so be careful you don't lose the longer connector provided in the box.

The rest of the motherboard is pretty much as you'd expect. There are four DIMM slots for memory, one PCI-E x1 and three PCI slots. There's plenty of room for storage, with three IDE and five internal and one external SATA2 connectors. They support newer drives with 300MB/s transfer rates, compared to 150MB/s for standard SATA. There's the usual range of RAID options as well.

Fitted with a 3.6GHz Pentium 4 the board returned scores of 145 in *Shopper's* application benchmarks and 5,498 in PCMark04, which is on a par with other motherboards using this chipset.

With high-definition audio as standard, the P5LD2 could be passed off as yet another motherboard. However, Asus also includes its WiFi TV card. This provides 802.11g wireless, as well as digital and analogue TV. There's also a remote control and CyberLink's PowerCinema software for controlling the TV. It's better than the usual TV software, although you only get a free Electronic Programming Guide (EPG) by using digital TV.

If you're thinking about building your own media centre PC, this board is a great starting point and very good value.

David Ludlow

✓ Excellent bundle; well priced

✗ Not officially SLI-compliant

SPECIFICATIONS Intel 945P chipset, takes LGA775 processors, four DDR2 memory slots, six SATA2 ports, three IDE ports, two PCI-E x16 and three PCI-E x1 slots, three PCI slots. **Part code** P5LD2 Deluxe

REVIEW GRAPHICS CARD

BIOSTAR
GeForce 7800 GTX

RATING ★★★★★

PRICE £380 inc VAT

SUPPLIER Biostar 01952 461141

DETAILS www.biostar.com.tw

If things were close performance wise between nVidia and ATI cards, they're not any more. While nVidia has released its latest chip, the GeForce 7800 GTX, ATI still shows no signs of releasing its contender.

Biostar's GeForce 7800 GTX shows us just how far ahead nVidia is. The card has 256MB of GDDR3 running at 600MHz (1.2GHz effective) and a core speed of 430MHz, which is faster than the 6800 Ultra. Rather than a simple clock speed increase, the new chip now has 24 pixel pipelines compared to the previous generation's 16. This means that the 7800 can handle considerably more data.

In the 3DMark03 benchmark it achieved the highest score we've seen from a single card: 15,769. The Doom 3 score of 96.7fps at 1,024x768 has been equalled, but here the processor was limiting performance. Upping the resolution to 1,600x1,200 produced a score of 52.9fps, which is only just behind two 6800 GTs running in SLI mode. It's clear that this is by far the fastest graphics card available.

Even better, it can be put into SLI mode with an identical Biostar 7800 GTX graphics card using SLI motherboards that are currently available. For the time being, though, two of these cards together would be overkill for any game.

The price and performance of the 7800 raises some questions about the existing line. The 6800 GT is currently available for around £300, which is only £100 cheaper than this card. Suddenly the 6800 range doesn't appear to be worth the money, whereas the 7800 seems very good value. For the fastest graphics on the market, Biostar's 7800 GTX is a superb card. Just don't be tempted by the lure of SLI at the moment, as there's nothing that will take advantage of it yet.

David Ludlow

✓ Incredibly fast; one card can handle high resolutions

✗ Budget for a monitor capable of 1,600x1,200 to get the most out of it

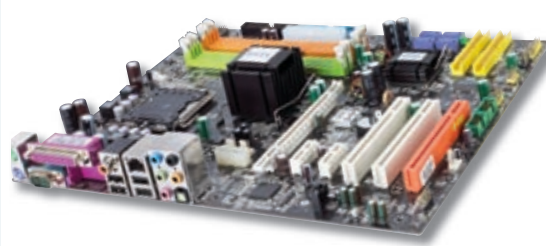
SPECIFICATIONS nVidia GeForce 7800 GTX, 256MB GDDR3 RAM (1.2GHz), 430MHz core speed, x16 PCI-E interface. **Part code** 7800GTX

REVIEW MOTHERBOARD

MSI
945P Neo

RATING ★★★★★

PRICE £98 inc VAT

SUPPLIER www.eclipsecomputers.comDETAILS www.msicomputer.co.uk

MSI's 945P Neo uses the same Intel 945P chipset as Asus's P5LD2 Deluxe motherboard (left). While Asus has taken this opportunity to add SLI capability to its board, MSI provides the first example of DTS Connect. Invented by the same people behind the DTS surround-sound format used in many cinemas, this encodes all PC sound into a DTS-compatible audio stream and sends it over a single S/PDIF connection. Stereo content is upmixed to 7.1 channels.

This means you can use your existing DTS surround-sound decoder to play all PC audio in surround sound. However, most people use analogue outputs to connect directly to their PC's speakers, so its main appeal will lie with the minority of people who have only digital inputs on their surround-sound systems.

Other than this, it is business as usual for this passively cooled motherboard. The 945P chipset means it supports all LGA775 processors, including dual-core and those with a 1,066MHz FSB.

We installed our 3.6GHz Pentium 4 and 1GB of DDR2 RAM in two of the four memory slots. The scores of 148 in *Shopper's* application benchmarks and 5,582 in PCMark04 were marginally better than from Asus's P5LD2.

The 945P has the usual storage options, including three IDE connectors and four SATA2 ports, which can be used in RAID arrays. There's also the standard range of ports, although FireWire is available only by connecting the blanking plate to the motherboard's header. Expansion is provided by three PCI, one PCI-E x16 and two PCI-E x1 slots.

The 945P Neo performs well for the price, but we believe that DTS Connect will appeal to only a small number of people. If you have digital inputs on your surround-sound system, then the 945P Neo is a good choice, but for everyone else nForce 4-based boards offer a better range of features.

David Ludlow

✓ Good performance; will work with existing surround-sound amplifiers

✗ DTS Connect will appeal to only a small number of people

SPECIFICATIONS Intel 945P chipset, takes LGA775 processors, four DDR2 memory slots, four SATA2 ports, three IDE ports, one PCI-E x16 and two PCI-E x1 slots, three PCI slots, DTS Connect, four USB2.0, Gigabit LAN. **Part code** 945P Neo